CLAIM AMENDMENTS

Please amend claim 1, and cancel claims 4, 5 as follows:

1. (Currently Amended) A magnetic linear displacement sensor comprising:

a Hall element having a sensor plate surface; and

at least one magnet having a lengthwise dimension along which said Hall element detects a magnetic field component orthogonal to the sensor plate surface during displacement sensing, said magnet comprising first and second pole faces disposed on opposite lengthwise sides thereof and having a polarization axis aligned orthogonally with respect to the lengthwise dimension, said first pole face opposing said Hall element and having a non-planar surface contoured to generate a substantially linear orthogonal magnetic field component sensed by said Hall element during linear displacement sensing,

wherein the surface contour of the first pole face is bounded at the ends of the lengthwise dimension of said magnet by lateral edges, such that the contour of the first pole face is characterized as generally sloping upward from each of the lateral edges and peaking at approximately the midpoint between the lateral edge; and

wherein the contour of the first pole face slopes upward from each of the lateral edges in a convex manner.

2. (Original) The magnetic linear displacement sensor of claim 1, wherein said Hall element and said magnet are mutually disposed in a manner wherein the contoured first pole face of said magnet opposes said Hall element and wherein the sensor plate surface is oriented in parallel with the polarization axis of said magnet.

3. (Original) The magnetic linear displacement sensor of claim 1, wherein said at least one magnet is moveable in a linear sensing path with respect to said Hall element, the sensing path being substantially parallel to the lengthwise dimension of said at least one magnet.

4. (Cancelled)

5. (Cancelled)

6. (Original) The magnetic linear displacement sensor of claim 1, wherein said Hall element is coupled to a fixed mounting site.

7. (Original) The magnetic linear displacement sensor of claim 6, wherein said at least one magnet is coupled to a linearly moving mounting site to effectuate a relative linear displacement between said Hall element and said at least one magnet.

8. (Original) The magnetic linear displacement sensor of claim 1, wherein the sensor plate surface of said Hall element is disposed orthogonally with respect to the lengthwise dimension of said at least one magnet.

9. (Original) The magnetic linear displacement sensor of claim 1, wherein said at least one magnet comprises first and second permanent magnets, said first and second permanent magnets mutually disposed such that the contoured first pole faces of said first and second permanent magnets are aligned in mutual opposition to form a sensing corridor therebetween, said Hall element plate disposed within the sensing corridor substantially centered between the contoured first pole faces of said first and second permanent magnets.

10. (Previously Amended) A magnetic linear displacement sensor comprising:

a Hall element having a sensor plate surface;

at least one magnet having a lengthwise dimension along which said Hall element detects a magnetic field component orthogonal to the sensor plate surface during displacement sensing, said magnet comprising first and second pole faces disposed on opposite lengthwise sides thereof and having a polarization axis aligned orthogonally with respect to the lengthwise dimension, said first pole face opposing said Hall element and having a non-planar surface contoured to generate a substantially linear orthogonal magnetic field component sensed by said Hall element during linear displacement sensing; and

wherein each of said at least one magnet is characterized as having a length of 23.0 mm, a width of 4.0 mm, and a varying height, H, wherein H varies in a symmetrically convex sloping from 4.23 mm at the ends to 5.60 mm at the center.

11. (Previously Amended) A magnetic linear displacement sensor comprising:

a Hall element having a sensor plate surface;

first and second permanent magnets each having a first pole face disposed on a convex contoured lengthwise side and a second pole face disposed on an opposite lengthwise side thereof, and each having a polarization axis aligned orthogonally with respect to the lengthwise dimension, said first and second permanent magnets mutually disposed such that the contoured first pole faces are aligned in mutual opposition to form a sensing corridor therebetween, said Hall element plate disposed within the sensing corridor substantially centered between the contoured first pole faces; and

wherein the surface contour of each of the first pole faces is bounded at the ends of the lengthwise dimension by lateral edges, and wherein the contour of the first pole face is characterized as generally sloping upward from each of the lateral edges and peaking at approximately the midpoint between the lateral edges.

12. (Previously Cancelled)

13. (Original) The magnetic linear displacement sensor of claim 11, wherein each of said first and second permanent magnets is characterized as having a length of 23.0 mm, a width of 4.0 mm, and a varying height, H, wherein H varies in a symmetrically convex sloping from 4.23 mm at the ends to 5.60 mm at the center.

14. (Previously Cancelled)
15. (Previously Cancelled)
16. (Previously Cancelled)
17. (Previously Cancelled)

18. (Previously Submitted) The magnetic linear displacement sensor of claim 11 wherein:

said Hall element and said magnet are mutually disposed in a manner wherein the contoured first pole face of said magnet opposes said Hall element and wherein the sensor plate surface is oriented in parallel with the polarization axis of said magnet; and

wherein said at least one magnet is moveable in a linear sensing path with respect to said Hall element, the sensing path being substantially parallel to the lengthwise dimension of said at least one magnet.

19. (Previously Submitted) The magnetic linear displacement sensor of claim 11 wherein:

the surface contour of the first pole face is bounded at the ends of the lengthwise dimension of said magnet by lateral edges, and wherein the contour of the first pole face is characterized as generally sloping upward from each of the

lateral edges and peaking at approximately the midpoint between the lateral edges; and

the contour of the first pole face slopes upward from each of the lateral edges in a convex manner.